

The demand must be filed directly with the competent International Preliminary Examining Authority or, if two or more Authorities are competent, with the one chosen by the applicant. The full name or two-letter code of that Authority may be indicated by the applicant on the line below:

IPEA/ _____

PCT

CHAPTER II

DEMAND

under Article 31 of the Patent Cooperation Treaty:
The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty.

For International Preliminary Examining Authority use only	
Identification of IPEA	Date of receipt of DEMAND
Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION Applicant's or agent's file reference 11345P5 WOW/KTC	
International application No. PCT/GB2004/004692	International filing date (day/month/year) 05-November-2004 (Earliest) Priority date (day/month/year) 7 November 2003
Title of invention PRODUCT AND METHOD FOR CONTROLLING FLYING INSECTS	
Box No. II APPLICANT(S)	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) Reckitt Benckiser (Australia) Pty Limited 44 Wharf Road West Ryde NSW 2114 AUSTRALIA	
Telephone No. +61 29857 2000 Facsimile No. +61 29858 5721 Teleprinter No. Applicant's registration No. with the Office	
State (that is, country) of nationality: AU	State (that is, country) of residence: AU
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) Bowman, Gary Raymond Reckitt Benckiser (Australia) Pty Limited 44 Wharf Road West Ryde NSW 2114 AUSTRALIA	
State (that is, country) of nationality: AU	State (that is, country) of residence: AU
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) Reckitt Benckiser (UK) Limited 103-105 Bath Road Slough Berkshire SL1 3UH UNITED KINGDOM	
State (that is, country) of nationality: GB	State (that is, country) of residence: GB
<input checked="" type="checkbox"/> Further applicants are indicated on a continuation sheet.	

Continuation of Box No. II APPLICANT(S)

*If none of the following sub-boxes is used, this sheet should not be included in the demand.*Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

BALAKRISHNAN, Krishanthi
Reckitt Benckiser (Australia) Pty Limited
44 Wharf Road
West Ryde
NSW 2114
AUSTRALIA

State *(that is, country)* of nationality:

LK

State *(that is, country)* of residence:

AU

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

Junus, Rosita
Reckitt Benckiser (Australia) Pty Limited
44 Wharf Road
West Ryde
NSW 2114
AUSTRALIA

State *(that is, country)* of nationality:

AU

State *(that is, country)* of residence:

AU

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

Kemmis, Bruce Graham
55 Beresford Road
Thornleigh
NSW 2120
AUSTRALIA

State *(that is, country)* of nationality:

AU

State *(that is, country)* of residence:

AU

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

Ridley, Philip Stephen
Reckitt Benckiser (Australia) Pty Limited
44 Wharf Road
West Ryde
NSW 2114
AUSTRALIA

State *(that is, country)* of nationality:State *(that is, country)* of residence:☒ Further applicants are indicated on another continuation sheet.

Continuation of Box No. II APPLICANT(S)

If none of the following sub-boxes is used, this sheet should not be included in the demand.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

THOMPSON, Ian Andrew
Reckitt Benckiser (Australia) Pty Limited
44 Wharf Road
West Ryde
NSW 2114
AUSTRALIA

State (that is, country) of nationality:

AU

State (that is, country) of residence:

AU

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (that is, country) of nationality:

State (that is, country) of residence:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (that is, country) of nationality:

State (that is, country) of residence:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

State (that is, country) of nationality:

State (that is, country) of residence:

☐ Further applicants are indicated on another continuation sheet.

Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCEThe following person is ☒ agent ☐ common representativeand ☐ has been appointed earlier and represents the applicant(s) also for international preliminary examination.☐ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.☒ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.Name and address: *(Family name followed by given name; for a legal entity, full official designation.
The address must include postal code and name of country.)*Karen T Cawdell
Reckitt Benckiser plc
Legal Department - Patents Group
Dansom Lane
Hull, HU8 7DS
UNITED KINGDOM

Telephone No.

+44 (0)1753 446232

Facsimile No.

+44 (0)1482 216876

Teleprinter No.

Agent's registration No. with the Office

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.**Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION****Statement concerning amendments:***

1. The applicant wishes the international preliminary examination to start on the basis of:

☐ the international application as originally filedthe description ☒ as originally filed☐ as amended under Article 34the claims ☐ as originally filed☐ as amended under Article 19 (together with any accompanying statement)☒ as amended under Article 34the drawings ☒ as originally filed☐ as amended under Article 342. ☐ The applicant wishes any amendment to the claims under Article 19 to be considered as reversed.3. ☐ The applicant wishes the start of the international preliminary examination to be postponed until the expiration of the applicable time limit under Rule 69.1(d).4. ☐ The applicant expressly wishes the international preliminary examination to start earlier than at the expiration of the applicable time limit under Rule 54bis.1(a).

* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Language for the purposes of international preliminary examination: English☒ which is the language in which the international application was filed.☐ which is the language of a translation furnished for the purposes of international search.☐ which is the language of publication of the international application.☐ which is the language of the translation (to be) furnished for the purposes of international preliminary examination.**Box No. V ELECTION OF STATES**

The filing of this demand constitutes the election of all Contracting States which are designated and are bound by Chapter II of the PCT.

Box No. VI CHECK LIST

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

- | | | | |
|--|---|-------|--------|
| 1. translation of international application | : | _____ | sheets |
| 2. amendments under Article 34 | : | 18 // | sheets |
| 3. copy (or, where required, translation) of amendments under Article 19 | : | _____ | sheets |
| 4. copy (or, where required, translation) of statement under Article 19 | : | _____ | sheets |
| 5. letter | : | 61 | sheets |
| 6. other (<i>specify</i>) | : | _____ | sheets |

For International Preliminary Examining Authority use only

received	not received
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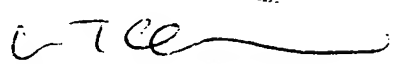
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The demand is also accompanied by the item(s) marked below:

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> fee calculation sheet | 5. <input type="checkbox"/> statement explaining lack of signature |
| 2. <input type="checkbox"/> original separate power of attorney | 6. <input type="checkbox"/> sequence listing in computer readable form |
| 3. <input type="checkbox"/> original general power of attorney | 7. <input type="checkbox"/> tables in computer readable form related to a sequence listing |
| 4. <input type="checkbox"/> copy of general power of attorney; reference number, if any: | 8. <input type="checkbox"/> other (<i>specify</i>): |

Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).


 Karen Cawdell
 Agent for the Applicants

For International Preliminary Examining Authority use only

1. Date of actual receipt of DEMAND:

2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):

3. ☐ The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply.
☐ The applicant has been informed accordingly.
4. ☐ The date of receipt of the demand is WITHIN the time limit of 19 months from the priority date as extended by virtue of Rule 80.5.
5. ☐ Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82.

6. ☐ The date of receipt of the demand is AFTER the expiration of the time limit under Rule 54bis.1(a) and item 7 or 8, below, does not apply.
7. ☐ The date of receipt of the demand is WITHIN the time limit under Rule 54bis.1(a) as extended by virtue of Rule 80.5.
8. ☐ Although the date of receipt of the demand is after the expiration of the time limit under Rule 54bis.1(a), the delay in arrival is EXCUSED pursuant to Rule 82.

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Demand received from IPEA on:

PCT

CHAPTER II

FEE CALCULATION SHEET

Annex to the Demand

<table border="1" style="width: 100%; border-collapse: collapse;"><tr><td style="width: 50%; padding: 5px;">International application No. PCT/GB2004/004692</td><td style="width: 50%; padding: 5px;">For International Preliminary Examining Authority use only</td></tr><tr><td style="padding: 5px;">Applicant's or agent's file reference 11345P5 WOW/KTC</td><td style="padding: 5px;">Date stamp of the IPEA</td></tr></table>	International application No. PCT/GB2004/004692	For International Preliminary Examining Authority use only	Applicant's or agent's file reference 11345P5 WOW/KTC	Date stamp of the IPEA															
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Applicant's or agent's file reference 11345P5 WOW/KTC	Date stamp of the IPEA																		
Applicant Reckitt Benckiser (Australia) Pty Limited et al																			
CALCULATION OF PRESCRIBED FEES <table style="width: 100%;"><tr><td style="width: 70%;">1. Preliminary examination fee</td><td style="width: 10%; text-align: right; border: 1px solid black;">1530.00</td><td style="width: 20%; text-align: center; border: 1px solid black;">P</td></tr><tr><td colspan="3"> </td></tr><tr><td>2. Handling fee (<i>Applicants from certain States are entitled to a reduction of 75% of the handling fee. Where the applicant is (or all applicants are) so entitled, the amount to be entered at H is 25% of the handling fee.</i>)</td><td style="text-align: right; border: 1px solid black;">129.00</td><td style="text-align: center; border: 1px solid black;">H</td></tr><tr><td colspan="3"> </td></tr><tr><td>3. Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box</td><td style="text-align: right; border: 1px solid black;">1659.00</td><td></td></tr><tr><td></td><td colspan="2" style="text-align: center; border: 1px solid black;">TOTAL</td></tr></table>		1. Preliminary examination fee	1530.00	P				2. Handling fee (<i>Applicants from certain States are entitled to a reduction of 75% of the handling fee. Where the applicant is (or all applicants are) so entitled, the amount to be entered at H is 25% of the handling fee.</i>)	129.00	H				3. Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box	1659.00			TOTAL	
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MODE OF PAYMENT <table style="width: 100%;"><tr><td style="width: 40%;"><input checked="" type="checkbox"/> authorization to charge deposit account with the IPEA (see below)</td><td style="width: 60%;"><input type="checkbox"/> cash</td></tr><tr><td><input type="checkbox"/> cheque</td><td><input type="checkbox"/> revenue stamps</td></tr><tr><td><input type="checkbox"/> postal money order</td><td><input type="checkbox"/> coupons</td></tr><tr><td><input type="checkbox"/> bank draft</td><td><input type="checkbox"/> other (specify):</td></tr></table>		<input checked="" type="checkbox"/> authorization to charge deposit account with the IPEA (see below)	<input type="checkbox"/> cash	<input type="checkbox"/> cheque	<input type="checkbox"/> revenue stamps	<input type="checkbox"/> postal money order	<input type="checkbox"/> coupons	<input type="checkbox"/> bank draft	<input type="checkbox"/> other (specify):										
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AUTHORIZATION TO CHARGE (OR CREDIT) DEPOSIT ACCOUNT <i>(This mode of payment may not be available at all IPEAs)</i> <table style="width: 100%;"><tr><td style="width: 50%; vertical-align: top;"><input checked="" type="checkbox"/> Authorization to charge the total fees indicated above. <input checked="" type="checkbox"/> <i>(This check-box may be marked only if the conditions for deposit accounts of the IPEA so permit)</i> Authorization to charge any deficiency or credit any overpayment in the total fees indicated above.</td><td style="width: 50%; vertical-align: top;">IPEA/ <u>EPO</u> Deposit Account No.: <u>2805 0225</u> Date: <u>9 August 2005</u> Name: <u>Karen Cawdell</u> Signature: <u><i>Karen Cawdell</i></u></td></tr></table>		<input checked="" type="checkbox"/> Authorization to charge the total fees indicated above. <input checked="" type="checkbox"/> <i>(This check-box may be marked only if the conditions for deposit accounts of the IPEA so permit)</i> Authorization to charge any deficiency or credit any overpayment in the total fees indicated above.	IPEA/ <u>EPO</u> Deposit Account No.: <u>2805 0225</u> Date: <u>9 August 2005</u> Name: <u>Karen Cawdell</u> Signature: <u><i>Karen Cawdell</i></u>																
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CLAIMS:

1. A cellulosic based substrate or matrix for controlling flying insects, the cellulosic based substrate or matrix impregnated and/or dosed with a vapour active pyrethroid in a carrier solvent,
 5 wherein the cellulosic based substrate or matrix has a surface area in the range of 50–5000 cm², the vapour active pyrethroid is selected from the group consisting of metofluthrin, transfluthrin, empenethrin, methothrin, tefluthrin, and fenfluthrin or mixtures thereof and is present in an amount of
 10 approximately 2.0-3000 mg/m², and the carrier solvent has an evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a boiling point range at or above about 120°C to below about 300°C and a Snyder polarity index in the range of approximately 0.0-4.0;
 such that the vapour active pyrethroid is emanated into an environment
 15 with non-augmented air movement at a rate of at least approximately 0.040 mg/h at a temperature in the range of approximately 18-40°C.

2. The cellulosic based substrate or matrix according to claim 1, wherein the solvent is selected from the group consisting of normal paraffins with a boiling
 20 point range of about 155-276°C, dearomatised aliphatic hydrocarbons and their blends in the boiling point range of about 150-265°C, isoparaffins in the boiling point range of about 150-300°C and glycol ethers in the boiling point range of about 120-243°C.

- 25 3. The cellulosic based substrate or matrix according to claim 1 or 2 wherein the carrier solvent has a boiling point in the range of approximately 150-265°C.

4. A cellulosic based substrate or matrix for controlling flying insects, the cellulosic based substrate or matrix impregnated and/or dosed with an
 30 insecticidally effective amount of a vapour active pyrethroid in a carrier solvent, wherein the vapour active pyrethroid is selected from the group consisting of metofluthrin, transfluthrin, empenethrin, methothrin, tefluthrin, and fenfluthrin or mixtures thereof and the carrier solvent has an evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a boiling point range at or
 35 above about 120°C to below about 300°C and a polarity index in the range of

approximately 0.0-4.0, such that the vapour active pyrethroid is emanated into the environment at a rate of at least approximately 0.040 mg/h.

5 5. The cellulosic based substrate or matrix according to claim 4, wherein the vapour active pyrethroid is metofluthrin.

6. The cellulosic based substrate or matrix according to any one of claims 1-5 wherein the cellulosic based substrate or matrix is impregnated and/or dosed with a vapour active pyrethroid in an amount of approximately 16-320 mg/m²
10 of the substrate or matrix surface area

7. The cellulosic based substrate or matrix according to claim 6 wherein the vapour active pyrethroid is in an amount of approximately 130-320 mg/m².

15 8. The cellulosic based substrate or matrix according to any one of claims 1-5 wherein the cellulosic based substrate or matrix is impregnated and/or dosed with a vapour active pyrethroid in an amount of approximately 48-960 mg/m² of the substrate or matrix surface area.

20 9. The cellulosic based substrate or matrix according to claim 8 wherein the vapour active pyrethroid is in an amount of approximately 390-960 mg/m².

10. The cellulosic based substrate or matrix according to any one of claims 1-5 wherein the cellulosic based substrate or matrix is impregnated and/or dosed
25 with a vapour active pyrethroid in an amount of approximately 144-2880 mg/m² of the substrate or matrix surface area.

11. The cellulosic based substrate or matrix according to claim 10 wherein the vapour active pyrethroid is in an amount of approximately 1170-2880 mg/m².
30

12. The cellulosic based substrate or matrix according to any one of claims 1-11 wherein the vapour active pyrethroid is emanated into the environment at a temperature in the range of approximately 21-40°C.

13. The cellulosic based substrate or matrix according to any one of claims 1 to 12 wherein the vapour active pyrethroid is emanated into the environment at a rate of at least approximately 0.075 mg/h.
- 5 14. The cellulosic based substrate or matrix according to any one of claims 1-13 wherein the vapour active pyrethroid is emanated into the environment at a rate of at least approximately 0.075 mg/h at a temperature in the range of approximately 21-35°C.
- 10 15. The cellulosic based substrate or matrix according to any one of claims 1 to 14 wherein the cellulosic based substrate or matrix has a grammage in the range of approximately 12 gsm to less than 260 gsm.
- 15 16. The cellulosic based substrate or matrix according to claim 15, wherein the cellulosic based substrate or matrix has a grammage of approximately 18 gsm to 40 gsm.
17. The cellulosic based substrate or matrix according to any one of claims 1 to 16 wherein the cellulosic based substrate or matrix is a paper substrate having a
- 20 grammage of approximately 18 gsm.
18. The cellulosic based substrate or matrix according to any one of claims 1 to 17, wherein the cellulosic based substrate or matrix is in the form of a honeycomb arrangement.
- 25 19. The cellulosic based substrate or matrix according to claim 18, wherein the honeycomb arrangement has two ends that are attached to a protective material into which the vapour active pyrethroid cannot migrate and/or be absorbed.
- 30 20. The cellulosic based substrate or matrix according to claim 19, wherein the honeycomb arrangement has an open form that allows emanation of the vapour active pyrethroid into the atmosphere and a closed form which inhibits migration and/or absorption of the vapour active pyrethroid into the atmosphere.

21. The cellulosic based substrate or matrix according to any one of claims 1–20 wherein the flying insects are controlled by knockdown.

22. The cellulosic based substrate or matrix according to any one of claims 1–21
5 wherein the flying insects are mosquitoes.

23 A flying insect control article comprising:

a) a cellulosic based substrate or matrix with a surface area in the range of 50–5000 cm² impregnated and/or dosed with a solution of vapour active
10 pyrethroid in an amount of approximately 2.0–3000 mg/m² in a carrier solvent, wherein the vapour active pyrethroid is selected from the group consisting of metofluthrin, transfluthrin, empenethrin, methothrin, tefluthrin, and fenfluthrin or mixtures thereof and the carrier solvent has an evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a boiling point range at or
15 above about 120°C to below about 300°C and a Snyder polarity index in the range of approximately 0.0–4.0;

the cellulosic based substrate or matrix impregnated and/or dosed with the vapour active pyrethroid in an amount such that the vapour active pyrethroid is emanated into an environment with non-augmented air
20 movement at a rate of at least approximately 0.040 mg/h at a temperature in the range of approximately 18–40°C; and

b) a protective material that is attached to the cellulosic based substrate or matrix into which protective material the vapour active pyrethroid does not migrate and/or is not absorbed;

25 wherein the cellulosic based substrate and/or matrix exists in a closed and open form such that when in the open form the pyrethroid is able to emanate from the substrate into the environment and when in the closed form the protective material covers the substrate or matrix to minimise emanation of the pyrethroid into the environment.

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24. The insect control article according to claim 23 wherein the solvent is selected from the group consisting of normal paraffins with a boiling point range of about 155–276°C, dearomatised aliphatic hydrocarbons and their blends in the boiling point range of about 150–265°C, isoparaffins in the boiling
35 point range of about 150–300°C and glycol ethers in the boiling point range of about 120–243°C.

25. The insect control article according to claim 23 or 24 wherein the carrier solvent has a boiling point in the range of approximately 150-265°C.

5 26. A flying insect control article comprising:

a) a cellulosic based substrate or matrix for controlling flying insects, the cellulosic based substrate or matrix impregnated and/or dosed with an insecticidally effective amount of a vapour active pyrethroid in a carrier solvent, wherein the vapour active pyrethroid is selected from the group consisting of metofluthrin, transfluthrin, empenethrin, methothrin, tefluthrin, and fenfluthrin or mixtures thereof and the carrier solvent has an evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a boiling point range at or above about 120°C to below about 300°C and a polarity index in the range of approximately 0.0-4.0 such that the vapour active pyrethroid is emanated into the environment at a rate of at least approximately 0.040 mg/h; and

b) a protective material that is attached to the cellulosic based substrate or matrix into which protective material the vapour active pyrethroid does not migrate and/or is not absorbed;

wherein the cellulosic based substrate and/or matrix exists in a closed and open form such that when in the open form the pyrethroid is able to emanate from the substrate into the environment and when in the closed form the protective material covers the substrate or matrix to minimise emanation of the pyrethroid into the environment.

25 27. The insect control article according to claim 26, wherein the vapour active pyrethroid is metofluthrin

28. The insect control article according to claim 26 or 27, wherein the cellulosic based substrate or matrix is in the form of a honeycomb arrangement.

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29. The insect control article according to claim 28, wherein the honeycomb arrangement has two ends that are attached to the protective material.

30. A packaged flying insect control article comprising:

35 a) a cellulosic based substrate or matrix with a surface area in the range of 50-5000 cm² impregnated and/or dosed with a solution of vapour active

pyrethroid in an amount of approximately 2.0-3000 mg/m² in a carrier solvent, wherein the vapour active pyrethroid is selected from the group consisting of metofluthrin, transfluthrin, empenethrin, methothrin, tefluthrin, and fenfluthrin or mixtures thereof and the carrier solvent has an evaporation rate according to
5 ASTM D3539-87 of less than approximately 1.0, a boiling point range at or above about 120°C to below about 300°C and a Snyder polarity index in the range of approximately 0.0-4.0;

the cellulosic based substrate or matrix impregnated and/or dosed with the vapour active pyrethroid in an amount such that the vapour active
10 pyrethroid is emanated into a non-augmented environment at a rate of at least approximately 0.040 mg/h at a temperature in the range of approximately 18-40°C; and

b) a packaging material enclosing the cellulosic based substrate or matrix into which material the vapour active pyrethroid does not migrate and/or is not
15 absorbed;

wherein when the packaging material enclosing the cellulosic based substrate or matrix is removed from around the cellulosic based substrate or matrix, the vapour active pyrethroid is free to emanate from the cellulosic based substrate or matrix exposed to the environment to control flying insects.

20

31. The insect control device according claim 30 wherein the solvent is selected from the group consisting of normal paraffins with a boiling point range of about 155-276°C, dearomatised aliphatic hydrocarbons and their blends in the boiling point range of about 150-265°C, isoparaffins in the boiling
25 point range of about 150-300°C and glycol ethers in the boiling point range of about 120-243°C.

32. The packaged flying insect control article according to claim 30 or 31 wherein the carrier solvent has an evaporation rate according to ASTM D3539-
30 87 of less than approximately 1.0, a boiling point in the range of approximately 150-265°C.

33. A packaged flying insect control article comprising:

a) a cellulosic based substrate or matrix for controlling flying insects, the
35 cellulosic based substrate or matrix impregnated and/or dosed with an insecticidally effective amount of a vapour active pyrethroid in a carrier solvent,

wherein the vapour active pyrethroid is selected from the group consisting of metofluthrin, transfluthrin, empenethrin, methothrin, tefluthrin, and fenfluthrin or mixtures thereof and the carrier solvent has an evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a boiling point range at or
 5 above about 120°C to below about 300°C and a polarity index in the range of approximately 0.0-4.0 such that the vapour active pyrethroid is emanated into the environment at a rate of at least approximately 0.040 mg/h; and

b) a packaging material enclosing the cellulosic based substrate or matrix into which material the vapour active pyrethroid does not migrate and/or is not
 10 absorbed;

wherein when the packaging material enclosing the cellulosic based substrate or matrix is removed from around the cellulosic based substrate or matrix, the vapour active pyrethroid is free to emanate from the cellulosic based substrate or matrix exposed to the environment to control flying insects.

15

34. The insect control device according to claim 33, wherein the vapour active pyrethroid is metofluthrin.

35. A stable flying insect control article comprising:

20 a cellulosic based substrate or matrix with a surface area in the range of 50-5000 cm², wet with a solution of vapour active pyrethroid in an amount of approximately 2.0-3000 mg/m² of the surface area and a carrier solvent, enclosed by a packaging material;

wherein the vapour active pyrethroid is selected from the group
 25 consisting of metofluthrin, transfluthrin, empenethrin, methothrin, tefluthrin, and fenfluthrin or mixtures thereof and the carrier solvent has an evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a boiling point range at or above about 120°C to below about 300°C and a Snyder polarity index in the range of approximately 0.0-4.0;

30 such that the vapour active pyrethroid emanates from the cellulosic substrate or matrix into a non-augmented environment at a rate of at least approximately 0.040 mg/h at a temperature in the range of approximately 18-40°C but does not migrate and/or is not absorbed into the packaging material.

35 36. The insect control article according to any one of claims 41-42 wherein the solvent is selected from the group consisting of normal paraffins with a boiling

point range of about 155-276°C, dearomatised aliphatic hydrocarbons and their blends in the boiling point range of about 150 -265°C, isoparaffins in the boiling point range of about 150-300°C and glycol ethers in the boiling point range of about 120-243°C.

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37. The stable flying insect control article according to claim 35 or 36 wherein the carrier solvent has a boiling point in the range of approximately 150-265°C.

38. A stable flying insect control article comprising:

10 a cellulosic based substrate or matrix wet with a solution of an insecticidally effective amount of a vapour active pyrethroid selected from the group consisting of metofluthrin, transfluthrin, empenethrin, methothrin, tefluthrin, and fenfluthrin or mixtures thereof and a carrier solvent having an evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a
15 boiling point range at or above about 120°C to below about 300°C and a polarity index in the range of approximately 0.0-4.0, enclosed by a packaging material;

wherein the vapour active pyrethroid emanates from the cellulosic substrate or matrix into the environment at a rate of at least approximately
20 0.040 mg/h but does not migrate and/or is not absorbed into the packaging material.

39. The insect control article according to claim 38, wherein the vapour active pyrethroid is metofluthrin.

25

40. The insect control article according to any one of claims 23 to 39 wherein the vapour active pyrethroid is emanated into the atmosphere at a rate of at least approximately 0.075 mg/h at a temperature in the range of about 21-35°C.

30 41. The insect control article according to any one of claims 23 to 40 wherein the cellulosic based substrate or matrix has a grammage within the range of approximately 12 gsm to less than 260 gsm.

42. The insect control article according to any one of claims 23 to 41 wherein
35 the cellulosic based substrate or matrix is a paper substrate with a grammage of about 18 gsm.

43. The packaged insect control device or insect control article according to any one of claims 30 to 39, wherein the cellulosic based substrate or matrix is in the form of a paper honeycomb arrangement.

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44. The insect control device according to claim 43, wherein the honeycomb arrangement has two ends that are attached to material through which the vapour active pyrethroid cannot migrate.

10 45. The insect control device according to claim 44, wherein the honeycomb arrangement has an open form that allows emanation of the vapour active pyrethroid into the atmosphere and a closed form which inhibits migration of the vapour active pyrethroid into the atmosphere.

15 46. The insect control article according to any one of claims 23 to 45, wherein the protective material and packaging material is selected from the group including metalised polyester, heat sealed polyester films, polyester based film and formed sheet and acrylonitrile-methyl acrylate copolymers and laminates thereof.

20

47. The insect control article according to any one of claims 23 to 45, wherein the protective material and packaging material is metal foil and laminates thereof.

25 48. The insect control article according to any one of claims 23 to 45, wherein the protective material and packaging material is glass.

49. A flying insect control article comprising:

a) a cellulosic based substrate or matrix with a surface area in the range of
 30 50-5000 cm² impregnated and/or dosed with a solution of vapour active pyrethroid in an amount of approximately 2.0-3000 mg/m² in a carrier solvent, the cellulosic based substrate or matrix impregnated and/or dosed with the vapour active pyrethroid in an amount such that the vapour active pyrethroid is emanated into an environment with non-augmented air movement at a rate of
 35 at least approximately 0.040 mg/h at a temperature in the range of approximately 18-40°C; and

b) a protective material that is attached to the cellulosic based substrate or matrix into which protective material the vapour active pyrethroid does not migrate and/or is not absorbed;

wherein

5 the protective material and packaging material is selected from the group including metalised polyester, heat sealed polyester films, polyester based film and formed sheet and acrylonitrile-methyl acrylate copolymers and laminates thereof; metal foil and laminates thereof; and glass; and

10 the cellulosic based substrate and/or matrix exists in a closed and open form such that when in the open form the pyrethroid is able to emanate from the substrate into the environemt and when in the closed form the protective material covers the substrate or matrix to minimise emanation of the pyrethroid into the environment.

15 50. A flying insect control article comprising:

a) a cellulosic based substrate or matrix for controlling flying insects, the cellulosic based substrate or matrix impregnated and/or dosed with an insecticidally effective amount of a vapour active pyrethroid in a carrier solvent, wherein the carrier solvent has an evaporation rate according to ASTM D3539-
20 87 of less than approximately 1.0, a boiling point range at or above about 120°C to below about 300°C and a polarity index in the range of approximately 0.0-4.0 such that the vapour active pyrethroid is emanated into the environment at a rate of at least approximately 0.040 mg/h; and

b) a protective material that is attached to the cellulosic based substrate or
25 matrix into which protective material the vapour active pyrethroid does not migrate and/or is not absorbed;

wherein

the protective material and packaging material is selected from the group including metalised polyester, heat sealed polyester films, polyester based film
30 and formed sheet and acrylonitrile-methyl acrylate copolymers and laminates thereof; metal foil and laminates thereof; and glass; and

the cellulosic based substrate and/or matrix exists in a closed and open form such that when in the open form the pyrethroid is able to emanate from the substrate into the enviroment and when in the closed form the protective
35 material covers the substrate or matrix to minimise emanation of the pyrethroid into the environment.

51. A packaged flying insect control article comprising:

- a) a cellulosic based substrate or matrix with a surface area in the range of 50–5000 cm² impregnated and/or dosed with a solution of vapour active pyrethroid in an amount of approximately 2.0–3000 mg/m² in a carrier solvent, the cellulosic based substrate or matrix impregnated and/or dosed with the vapour active pyrethroid in an amount such that the vapour active pyrethroid is emanated into a non-augmented environment at a rate of at least approximately 0.040 mg/h at a temperature in the range of approximately 18–40°C; and
- b) a packaging material enclosing the cellulosic based substrate or matrix into which material the vapour active pyrethroid does not migrate and/or is not absorbed;

wherein the protective material and packaging material is selected from the group including metalised polyester, heat sealed polyester films, polyester based film and formed sheet and acrylonitrile-methyl acrylate copolymers and laminates thereof; metal foil and laminates thereof; and glass; and

such that when the packaging material enclosing the cellulosic based substrate or matrix is removed from around the cellulosic based substrate or matrix, the vapour active pyrethroid is free to emanate from the cellulosic based substrate or matrix exposed to the environment to control flying insects.

52. A packaged flying insect control article comprising:

- a) a cellulosic based substrate or matrix for controlling flying insects, the cellulosic based substrate or matrix impregnated and/or dosed with an insecticidally effective amount of a vapour active pyrethroid in a carrier solvent, such that the vapour active pyrethroid is emanated into the environment at a rate of at least approximately 0.040 mg/h; and
- b) a packaging material enclosing the cellulosic based substrate or matrix into which material the vapour active pyrethroid does not migrate and/or is not absorbed;

wherein the protective material and packaging material is selected from the group including metalised polyester, heat sealed polyester films, polyester based film and formed sheet and acrylonitrile-methyl acrylate copolymers and laminates thereof; metal foil and laminates thereof; and glass; and

such that when the packaging material enclosing the cellulosic based substrate or matrix is removed from around the cellulosic based substrate or matrix, the vapour active pyrethroid is free to emanate from the cellulosic based substrate or matrix exposed to the environment to control flying insects.

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53. A stable flying insect control article comprising:

a cellulosic based substrate or matrix with a surface area in the range of 50–5000 cm², wet with a solution of vapour active pyrethroid in an amount of approximately 2.0–3000 mg/m² of the surface area and a carrier solvent,
10 enclosed by a packaging material;

wherein the protective material and packaging material is selected from the group including metalised polyester, heat sealed polyester films, polyester based film and formed sheet and acrylonitrile-methyl acrylate copolymers and laminates thereof; metal foil and laminates thereof; and glass; and

15

such that the vapour active pyrethroid emanates from the cellulosic substrate or matrix into a non-augmented environment at a rate of at least approximately 0.040 mg/h at a temperature in the range of approximately 18–40°C but does not migrate and/or is not absorbed into the packaging material.

20 54. A stable flying insect control article comprising:

a cellulosic based substrate or matrix wet with a solution of an insecticidally effective amount of a vapour active pyrethroid and a carrier solvent having an evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a boiling point range at or above about 120°C to below about
25 300°C and a polarity index in the range of approximately 0.0–4.0, enclosed by a packaging material;

wherein the protective material and packaging material is selected from the group including metalised polyester, heat sealed polyester films, polyester based film and formed sheet and acrylonitrile-methyl acrylate copolymers and
30 laminates thereof; metal foil and laminates thereof; and glass; and

such that the vapour active pyrethroid emanates from the cellulosic substrate or matrix into the environment at a rate of at least approximately 0.040 mg/h but does not migrate and/or is not absorbed into the packaging material.

35

55. A method for controlling flying insects comprising the steps of:

- a) providing the cellulosic based substrate or matrix or insect control article according to any one of claims 1 to 54;
- b) exposing the cellulosic based substrate or matrix in an environment with non-augmented air movement; and
- 5 c) allowing the vapour active pyrethroid impregnated within and/or dosed on the cellulosic based substrate or matrix to passively emanate into the air.

56. The insect control article of anyone of claims 23-54 and the method according to claim 55 wherein the vapour active pyrethroid emanates into the
10 atmosphere to knockdown flying insects.

57. The insect control article of anyone of claims 23-54 and the method according to claim 55 wherein the flying insects are mosquitoes.

- 15 58. A method of packaging a cellulosic based substrate or matrix or insect control article according to any one of claims 1 to 54 comprising the steps of:
- a) providing a packaging material through which the vapour active pyrethroid does not migrate and/or is not absorbed;
 - b) forming a pouch with the packaging material;
 - 20 c) filling the pouch with the cellulosic based substrate or matrix or insect control article; and
 - d) sealing the pouch.

59. The method according to claim 58 wherein the packaging material is
25 selected from the group consisting of metalised polyester, heat sealed polyester films, polyester based film and formed sheet and acrylonitrile-methyl acrylate copolymers and laminates thereof, metal foil and laminates thereof and glass.

CLAIMS:

1. A cellulosic based substrate or matrix for
controlling flying insects, the cellulosic based substrate
5 or matrix impregnated and/or dosed with a vapour active
pyrethroid in a carrier solvent,

wherein the cellulosic based substrate or matrix has
a surface area in the range of 50-5000 cm², the vapour
active pyrethroid is selected from the group consisting of
10 metofluthrin, transfluthrin, empenethrin, methothrin,
tefluthrin, and fenfluthrin or mixtures thereof and is
present in an amount of approximately 2.0-3000 mg/m², and
the carrier solvent has an evaporation rate according to
ASTM D3539-87 of less than approximately 1.0, a boiling
15 point ~~(in the range of approximately 120-330°C)~~ ^{range at or above about 120°C to below about 300°C} and a Snyder
polarity index in the range of approximately 0.0-4.0;

such that the vapour active pyrethroid is emanated
into an environment with non-augmented air movement at a
rate of at least approximately 0.040 mg/h at a temperature
20 in the range of approximately 18-40°C.

2. The cellulosic based substrate or matrix according
to claim 1, wherein the solvent is selected from the group
consisting of normal paraffins with a boiling point range
25 of about 155-276°C, dearomatised aliphatic hydrocarbons
and their blends in the boiling point range of about 150-
265°C, isoparaffins in the boiling point range of about
150-300°C and glycol ethers in the boiling point range of
about 120-243°C.

3. The cellulosic based substrate or matrix according to claim 1 or 2 wherein the carrier solvent has a boiling point in the range of approximately 150-265°C.

5 4. A cellulosic based substrate or matrix for controlling flying insects, the cellulosic based substrate or matrix impregnated and/or dosed with an insecticidally effective amount of a vapour active pyrethroid in a carrier solvent, wherein the vapour active pyrethroid is
 10 selected from the group consisting of metofluthrin, transfluthrin, empenethrin, methothrin, tefluthrin, and fenfluthrin or mixtures thereof and the carrier solvent has an evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a boiling point ^{range at or above} ~~(in the range of~~
 15 ~~about 120°C to below about 300°C~~ ~~(approximately 120-330°C)~~ and a polarity index in the range of approximately 0.0-4.0, such that the vapour active pyrethroid is emanated into the environment at a rate of at least approximately 0.040 mg/h.

20 5. The cellulosic based substrate or matrix according to claim 4, wherein the vapour active pyrethroid is metofluthrin.

6. The cellulosic based substrate or matrix according
 25 to any one of claims 1-5 wherein the cellulosic based substrate or matrix is impregnated and/or dosed with a vapour active pyrethroid in an amount of approximately 16-320 mg/m² of the substrate or matrix surface area

30 7. The cellulosic based substrate or matrix according to claim 6 wherein the vapour active pyrethroid is in an amount of approximately 130-320 mg/m².

8. The cellulosic based substrate or matrix according to any one of claims 1-5 wherein the cellulosic based substrate or matrix is impregnated and/or dosed with a vapour active pyrethroid in an amount of approximately 48-960 mg/m² of the substrate or matrix surface area.

9. The cellulosic based substrate or matrix according to claim 8 wherein the vapour active pyrethroid is in an amount of approximately 390-960 mg/m².

10. The cellulosic based substrate or matrix according to any one of claims 1-5 wherein the cellulosic based substrate or matrix is impregnated and/or dosed with a vapour active pyrethroid in an amount of approximately 144-2880 mg/m² of the substrate or matrix surface area.

11. The cellulosic based substrate or matrix according to claim 10 wherein the vapour active pyrethroid is in an amount of approximately 1170-2880 mg/m².

12. The cellulosic based substrate or matrix according to any one of claims 1-11 wherein the vapour active pyrethroid is emanated into the environment at a temperature in the range of approximately 21-40°C.

13. The cellulosic based substrate or matrix according to any one of claims 1 to 12 wherein the vapour active pyrethroid is emanated into the environment at a rate of at least approximately 0.075 mg/h.

14. The cellulosic based substrate or matrix according to any one of claims 1-13 wherein the vapour active pyrethroid is emanated into the environment at a rate of at least approximately 0.075 mg/h at a temperature in the range of approximately 21-35°C.

15. The cellulosic based substrate or matrix according to any one of claims 1 to 14 wherein the cellulosic based substrate or matrix has a grammage in the range of approximately 12 gsm to less than 260 gsm.

16. The cellulosic based substrate or matrix according to claim 15, wherein the cellulosic based substrate or matrix has a grammage of approximately 18 gsm to 40 gsm.

17. The cellulosic based substrate or matrix according to any one of claims 1 to 16 wherein the cellulosic based substrate or matrix is a paper substrate having a grammage of approximately 18 gsm.

18. The cellulosic based substrate or matrix according to any one of claims 1 to 17, wherein the cellulosic based substrate or matrix is in the form of a honeycomb arrangement.

19. The cellulosic based substrate or matrix according to claim 18, wherein the honeycomb arrangement has two ends that are attached to a protective material into which the vapour active pyrethroid cannot migrate and/or be absorbed.

20. The cellulosic based substrate or matrix according to claim 19, wherein the honeycomb arrangement has an open form that allows emanation of the vapour active pyrethroid into the atmosphere and a closed form which inhibits migration and/or absorption of the vapour active pyrethroid into the atmosphere.

21. The cellulosic based substrate or matrix according to any one of claims 1-20 wherein the flying insects are controlled by knockdown.

22. The cellulosic based substrate or matrix according to any one of claims 1-21 wherein the flying insects are mosquitoes.

15

23 A flying insect control article comprising:

a) a cellulosic based substrate or matrix with a surface area in the range of 50-5000 cm² impregnated and/or dosed with a solution of vapour active pyrethroid in an amount of approximately 2.0-3000 mg/m² in a carrier solvent, wherein the vapour active pyrethroid is selected from the group consisting of metofluthrin, transfluthrin, empenethrin, methothrin, tefluthrin, and fenfluthrin or mixtures thereof and the carrier solvent has an evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a boiling point ^{range of or above about} ~~(in the range of~~ approximately 1.0, a boiling point ^{120°C to below about 300°C} ~~(approximately 120-330°C)~~ and a Snyder polarity index in the range of approximately 0.0-4.0;

the cellulosic based substrate or matrix impregnated and/or dosed with the vapour active pyrethroid in an amount such that the vapour active pyrethroid is emanated into an environment with non-augmented air movement at a

rate of at least approximately 0.040 mg/h at a temperature in the range of approximately 18-40°C; and

b) a protective material that is attached to the cellulosic based substrate or matrix into which protective material the vapour active pyrethroid does not migrate and/or is not absorbed;

wherein the cellulosic based substrate and/or matrix exists in a closed and open form such that when in the open form the pyrethroid is able to emanate from the substrate into the environment and when in the closed form the protective material covers the substrate or matrix to minimise emanation of the pyrethroid into the environment.

24. The insect control article according to claim 23 wherein the solvent is selected from the group consisting of normal paraffins with a boiling point range of about 155-276°C, dearomatised aliphatic hydrocarbons and their blends in the boiling point range of about 150-265°C, isoparaffins in the boiling point range of about 150-300°C and glycol ethers in the boiling point range of about 120-243°C.

25. The insect control article according to claim 23 or 24 wherein the carrier solvent has a boiling point in the range of approximately 150-265°C.

26. A flying insect control article comprising:

a) a cellulosic based substrate or matrix for controlling flying insects, the cellulosic based substrate or matrix impregnated and/or dosed with an insecticidally effective amount of a vapour active pyrethroid in a

carrier solvent, wherein the vapour active pyrethroid is selected from the group consisting of metofluthrin, transfluthrin, empenethrin, methothrin, tefluthrin, and fenfluthrin or mixtures thereof and the carrier solvent

- 5 has an evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a boiling point ^{range at or above about} ~~(in the range of~~ ^{120°C to below about 300°C} ~~approximately 120-330°C)~~ and a polarity index in the range of approximately 0.0-4.0 such that the vapour active pyrethroid is emanated into the environment at a rate of
- 10 at least approximately 0.040 mg/h; and

b) a protective material that is attached to the cellulosic based substrate or matrix into which protective material the vapour active pyrethroid does not migrate and/or is not absorbed;

- 15 wherein the cellulosic based substrate and/or matrix exists in a closed and open form such that when in the open form the pyrethroid is able to emanate from the substrate into the environment and when in the closed form the protective material covers the substrate or matrix to
- 20 minimise emanation of the pyrethroid into the environment.

27. The insect control article according to claim 26, wherein the vapour active pyrethroid is metofluthrin

- 25 28. The insect control article according to claim 26 or 27, wherein the cellulosic based substrate or matrix is in the form of a honeycomb arrangement.

29. The insect control article according to claim 28,
- 30 wherein the honeycomb arrangement has two ends that are attached to the protective material.

30. A packaged flying insect control article comprising:

- a) a cellulosic based substrate or matrix with a surface area in the range of 50-5000 cm² impregnated
 5 and/or dosed with a solution of vapour active pyrethroid in an amount of approximately 2.0-3000 mg/m² in a carrier solvent, wherein the vapour active pyrethroid is selected from the group consisting of metofluthrin, transfluthrin, empenethrin, methothrin, tefluthrin, and fenfluthrin or
 10 mixtures thereof and the carrier solvent has an evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a boiling point ^{range at or above about} ~~(in the range of~~ _{20°C to below about 300°C} ~~approximately 120-330°C~~ and a Snyder polarity index in the range of approximately 0.0-4.0;
 15 the cellulosic based substrate or matrix impregnated and/or dosed with the vapour active pyrethroid in an amount such that the vapour active pyrethroid is emanated into a non-augmented environment at a rate of at least approximately 0.040 mg/h at a temperature in the range of
 20 approximately 18-40°C; and

- b) a packaging material enclosing the cellulosic based substrate or matrix into which material the vapour active pyrethroid does not migrate and/or is not absorbed;
 wherein when the packaging material enclosing the
 25 cellulosic based substrate or matrix is removed from around the cellulosic based substrate or matrix, the vapour active pyrethroid is free to emanate from the cellulosic based substrate or matrix exposed to the environment to control flying insects.

30

31. The insect control device according claim 30 wherein the solvent is selected from the group consisting

of normal paraffins with a boiling point range of about 155-276°C, dearomatised aliphatic hydrocarbons and their blends in the boiling point range of about 150-265°C, isoparaffins in the boiling point range of about 150-300°C and glycol ethers in the boiling point range of about 120-243°C.

32. The packaged flying insect control article according to claim 30 or 31 wherein the carrier solvent has an evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a boiling point in the range of approximately 150-265°C.

33. A packaged flying insect control article comprising:

a) a cellulosic based substrate or matrix for controlling flying insects, the cellulosic based substrate or matrix impregnated and/or dosed with an insecticidally effective amount of a vapour active pyrethroid in a carrier solvent, wherein the vapour active pyrethroid is selected from the group consisting of metofluthrin, transfluthrin, empenethrin, methothrin, tefluthrin, and fenfluthrin or mixtures thereof and the carrier solvent has an evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a boiling point ^{range at or above about} ~~in the range of~~ ^{120°C to below about 300°C} ~~approximately 120-300°C~~ and a polarity index in the range of approximately 0.0-4.0 such that the vapour active pyrethroid is emanated into the environment at a rate of at least approximately 0.040 mg/h; and

b) a packaging material enclosing the cellulosic based substrate or matrix into which material the vapour active pyrethroid does not migrate and/or is not absorbed;

wherein when the packaging material enclosing the
 5 cellulosic based substrate or matrix is removed from around the cellulosic based substrate or matrix, the vapour active pyrethroid is free to emanate from the cellulosic based substrate or matrix exposed to the environment to control flying insects.

10

34. The insect control device according to claim 33, wherein the vapour active pyrethroid is metofluthrin.

35. A stable flying insect control article comprising:
 15 a cellulosic based substrate or matrix with a surface area in the range of 50-5000 cm², wet with a solution of vapour active pyrethroid in an amount of approximately 2.0-3000 mg/m² of the surface area and a carrier solvent, enclosed by a packaging material;

20 wherein the vapour active pyrethroid is selected from the group consisting of metofluthrin, transfluthrin, empenethrin, methothrin, tefluthrin, and fenfluthrin or mixtures thereof and the carrier solvent has an evaporation rate according to ASTM D3539-87 of less than
 25 approximately 1.0, a boiling point ^{range of or above about} ~~in the range of~~ ^{120°C to below about 300°C} ~~approximately 120-330°C~~ and a Snyder polarity index in the range of approximately 0.0-4.0;

such that the vapour active pyrethroid emanates from the cellulosic substrate or matrix into a non-augmented
 30 environment at a rate of at least approximately 0.040 mg/h at a temperature in the range of approximately 18-40°C but

does not migrate and/or is not absorbed into the packaging material.

36. The insect control article according to any one of
5 claims 41-42 wherein the solvent is selected from the
group consisting of normal paraffins with a boiling point
range of about 155-276°C, dearomatised aliphatic
hydrocarbons and their blends in the boiling point
10 range of about 150-300°C and glycol ethers in the boiling
point range of about 120-243°C.

37. The stable flying insect control article according
to claim 35 or 36 wherein the carrier solvent has a
15 boiling point in the range of approximately 150-265°C.

38. A stable flying insect control article comprising:
a cellulosic based substrate or matrix wet with a
solution of an insecticidally effective amount of a vapour
20 active pyrethroid selected from the group consisting of
metofluthrin, transfluthrin, empenethrin, methothrin,
tefluthrin, and fenfluthrin or mixtures thereof and a
carrier solvent having an evaporation rate according to
ASTM D3539-87 of less than approximately 1.0, a boiling
25 point ^{range at or above about 120°C to below about 300°C} ~~(in the range of approximately 120-330°C)~~ and a
polarity index in the range of approximately 0.0-4.0,
enclosed by a packaging material;

wherein the vapour active pyrethroid emanates from
the cellulosic substrate or matrix into the environment at
30 a rate of at least approximately 0.040 mg/h but does not

migrate and/or is not absorbed into the packaging material.

39. The insect control article according to claim
5 38, wherein the vapour active pyrethroid is metofluthrin.

40. The insect control article according to any one of
claims 23 to 39 wherein the vapour active pyrethroid is
emanated into the atmosphere at a rate of at least
10 approximately 0.075 mg/h at a temperature in the range of
about 21-35°C.

41. The insect control article according to any one of
claims 23 to 40 wherein the cellulosic based substrate or
15 matrix has a grammage within the range of approximately 12
gsm to less than 260 gsm.

42. The insect control article according to any one of
claims 23 to 41 wherein the cellulosic based substrate or
20 matrix is a paper substrate with a grammage of about 18
gsm.

43. The packaged insect control device or insect
control article according to any one of claims 30 to 39,
25 wherein the cellulosic based substrate or matrix is in the
form of a paper honeycomb arrangement.

44. The insect control device according to claim 43,
wherein the honeycomb arrangement has two ends that are
30 attached to material through which the vapour active
pyrethroid cannot migrate.

45. The insect control device according to claim 44, wherein the honeycomb arrangement has an open form that allows emanation of the vapour active pyrethroid into the atmosphere and a closed form which inhibits migration of the vapour active pyrethroid into the atmosphere.

46. The insect control article according to any one of claims 23 to 45, wherein the protective material and packaging material is selected from the group including metalised polyester, heat sealed polyester films, polyester based film and formed sheet and acrylonitrile-methyl acrylate copolymers and laminates thereof.

47. The insect control article according to any one of claims 23 to 45, wherein the protective material and packaging material is metal foil and laminates thereof.

48. The insect control article according to any one of claims 23 to 45, wherein the protective material and packaging material is glass.

49 A flying insect control article comprising:

a) a cellulosic based substrate or matrix with a surface area in the range of 50-5000 cm² impregnated and/or dosed with a solution of vapour active pyrethroid in an amount of approximately 2.0-3000 mg/m² in a carrier solvent, the cellulosic based substrate or matrix impregnated and/or dosed with the vapour active pyrethroid in an amount such that the vapour active pyrethroid is emanated into an environment with non-augmented air movement at a rate of at least approximately 0.040 mg/h at a temperature in the range of approximately 18-40°C; and

b) a protective material that is attached to the cellulosic based substrate or matrix into which protective material the vapour active pyrethroid does not migrate and/or is not absorbed;

5 wherein

the protective material and packaging material is selected from the group including metalised polyester, heat sealed polyester films, polyester based film and formed sheet and acrylonitrile-methyl acrylate copolymers
10 and laminates thereof; metal foil and laminates thereof; and glass; and

the cellulosic based substrate and/or matrix exists in a closed and open form such that when in the open form the pyrethroid is able to emanate from the substrate into
15 the environment and when in the closed form the protective material covers the substrate or matrix to minimise emanation of the pyrethroid into the environment.

50. A flying insect control article comprising:

20 a) a cellulosic based substrate or matrix for controlling flying insects, the cellulosic based substrate or matrix impregnated and/or dosed with an insecticidally effective amount of a vapour active pyrethroid in a carrier solvent, wherein the carrier solvent has an
25 evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a boiling point ^{range at or above about} ~~in the range of~~ ^{120°C to below about 300°C} ~~approximately 120-330°C~~ and a polarity index in the range of approximately 0.0-4.0 such that the vapour active pyrethroid is emanated into the environment at a rate of
30 at least approximately 0.040 mg/h; and

b) a protective material that is attached to the cellulosic based substrate or matrix into which protective

material the vapour active pyrethroid does not migrate and/or is not absorbed;

wherein

- the protective material and packaging material is
- 5 selected from the group including metalised polyester, heat sealed polyester films, polyester based film and formed sheet and acrylonitrile-methyl acrylate copolymers and laminates thereof; metal foil and laminates thereof; and glass; and
- 10 the cellulosic based substrate and/or matrix exists in a closed and open form such that when in the open form the pyrethroid is able to emanate from the substrate into the environment and when in the closed form the protective material covers the substrate or matrix to minimise
- 15 emanation of the pyrethroid into the environment.

51. A packaged flying insect control article comprising:

- a) a cellulosic based substrate or matrix with a
- 20 surface area in the range of 50-5000 cm² impregnated and/or dosed with a solution of vapour active pyrethroid in an amount of approximately 2.0-3000 mg/m² in a carrier solvent, the cellulosic based substrate or matrix impregnated and/or dosed with the vapour active pyrethroid
- 25 in an amount such that the vapour active pyrethroid is emanated into a non-augmented environment at a rate of at least approximately 0.040 mg/h at a temperature in the range of approximately 18-40°C; and
- b) a packaging material enclosing the cellulosic
- 30 based substrate or matrix into which material the vapour active pyrethroid does not migrate and/or is not absorbed;

wherein the protective material and packaging material is selected from the group including metalised polyester, heat sealed polyester films, polyester based film and formed sheet and acrylonitrile-methyl acrylate
5 copolymers and laminates thereof; metal foil and laminates thereof; and glass; and

such that when the packaging material enclosing the cellulosic based substrate or matrix is removed from around the cellulosic based substrate or matrix, the
10 vapour active pyrethroid is free to emanate from the cellulosic based substrate or matrix exposed to the environment to control flying insects.

52. A packaged flying insect control article
15 comprising:

a) a cellulosic based substrate or matrix for controlling flying insects, the cellulosic based substrate or matrix impregnated and/or dosed with an insecticidally effective amount of a vapour active pyrethroid in a
20 carrier solvent, such that the vapour active pyrethroid is emanated into the environment at a rate of at least approximately 0.040 mg/h; and

b) a packaging material enclosing the cellulosic based substrate or matrix into which material the vapour
25 active pyrethroid does not migrate and/or is not absorbed;

wherein the protective material and packaging material is selected from the group including metalised polyester, heat sealed polyester films, polyester based film and formed sheet and acrylonitrile-methyl acrylate
30 copolymers and laminates thereof; metal foil and laminates thereof; and glass; and

such that when the packaging material enclosing the cellulosic based substrate or matrix is removed from around the cellulosic based substrate or matrix, the vapour active pyrethroid is free to emanate from the cellulosic based substrate or matrix exposed to the environment to control flying insects.

53. A stable flying insect control article comprising:
a cellulosic based substrate or matrix with a surface area in the range of 50-5000 cm², wet with a solution of vapour active pyrethroid in an amount of approximately 2.0-3000 mg/m² of the surface area and a carrier solvent, enclosed by a packaging material;

wherein the protective material and packaging material is selected from the group including metalised polyester, heat sealed polyester films, polyester based film and formed sheet and acrylonitrile-methyl acrylate copolymers and laminates thereof; metal foil and laminates thereof; and glass; and

such that the vapour active pyrethroid emanates from the cellulosic substrate or matrix into a non-augmented environment at a rate of at least approximately 0.040 mg/h at a temperature in the range of approximately 18-40°C but does not migrate and/or is not absorbed into the packaging material.

54. A stable flying insect control article comprising:
a cellulosic based substrate or matrix wet with a solution of an insecticidally effective amount of a vapour active pyrethroid and a carrier solvent having an evaporation rate according to ASTM D3539-87 of less than approximately 1.0, a boiling point ~~in the range of~~ range

(at or above about 120°C to below about 300°C)
~~approximately 120-350°C~~ and a polarity index in the range
 of approximately 0.0-4.0, enclosed by a packaging
 material;

wherein the protective material and packaging
 5 material is selected from the group including metalised
 polyester, heat sealed polyester films, polyester based
 film and formed sheet and acrylonitrile-methyl acrylate
 copolymers and laminates thereof; metal foil and laminates
 thereof; and glass; and

10 such that the vapour active pyrethroid emanates from
 the cellulosic substrate or matrix into the environment at
 a rate of at least approximately 0.040 mg/h but does not
 migrate and/or is not absorbed into the packaging
 material.

15

55. A method for controlling flying insects comprising
 the steps of:

providing the cellulosic based substrate or matrix or
 insect control article according to any one of claims 1 to

20 54;

b) exposing the cellulosic based substrate or
 matrix in an environment with non-augmented air movement;
 and

c) allowing the vapour active pyrethroid
 25 impregnated within and/or dosed on the cellulosic based
 substrate or matrix to passively emanate into the air.

56 The insect control article of anyone of claims 23-
 54 and the method according to claim 55 wherein the vapour
 30 active pyrethroid emanates into the atmosphere to
 knockdown flying insects.

57 The insect control article of anyone of claims 23-54 and the method according to claim 55 wherein the flying insects are mosquitoes.

5 58. A method of packaging a cellulosic based substrate or matrix or insect control article according to any one of claims 1 to 54 comprising the steps of:

providing a packaging material through which the vapour active pyrethroid does not migrate and/or is not
10 absorbed;
forming a pouch with the packaging material;
filling the pouch with the cellulosic based substrate or matrix or insect control article; and
sealing the pouch.

15

59. The method according to claim 58 wherein the packaging material is selected from the group consisting of metalised polyester, heat sealed polyester films, polyester based film and formed sheet and acrylonitrile-
20 methyl acrylate copolymers and laminates thereof, metal foil and laminates thereof and glass.